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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

SPITTLE, MATTHEW D

ART UNIT

PAPER NUMBER

2111

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/568,046	Applicant(s) CHRISTENSEN ET AL.	
	Examiner MATTHEW D. SPITTLE	Art Unit 2111	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 February 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>3/27/2008</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claims 1 – 25 have been examined.

Drawings

5 The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the “programmable device” must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

 Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in
10 reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet,
15 and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New
20 Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

25 The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

30 Claims 1, 14 and 19 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the
35 invention.

 Claims 1, 14 and 19 recite the language, "...adapted for..." The disclosure provides no support for an adapting operation. No adaptable element or step is disclosed, nor are any parameters and ranges of adaptation disclosed such that one of ordinary skill in the art would be able to accomplish "adapting" the elements claimed or
40 determine the appropriate parameters which require "adaptation."

 The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

45 Claims 1, 14 and 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The "adapted for" language present in the claims is indefinite in that the nature of what adaptation operation intended to be covered by the claim language is not recited, nor are any parameters indicated for adaptation. One of ordinary skill in the art looking at the claims would therefore not be able to clearly discern the metes and bounds of the claim such that a determination of whether, or not, a device may infringe the claim may be properly made.

Claim 3 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The language of claim 3 is confusing and unclear in terms of scope because of the numerous "at least one of" language. For purposes of examination, the Examiner will assume Applicant has meant to claim:

The broadcast router of claim 1, wherein the configuration information comprises at least one of configuration data for FPGAs, checksums and codes to enable and disable logic in the FPGAs and other custom ICs, checksums and codes that enable and disable different functionality of CPU-based state machines within the broadcast router, and executable code that enable and disable different functionality of CPU-based systems within the broadcast router.

70 Claim 8 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite
for failing to particularly point out and distinctly claim the subject matter which applicant
regards as the invention.

 Claim 8 recites wherein the expansion card and the matrix card are implemented
on a same card. This directly contradicts the claim language of claim 6, which has
75 established that the two are implemented on separate cards. A dependant claim cannot
undo a limitation of its parent claim.

Claim Rejections - 35 USC § 103

80 The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all
obviousness rejections set forth in this Office action:

85 (a) A patent may not be obtained though the invention is not identically disclosed or described as set
forth in section 102 of this title, if the differences between the subject matter sought to be patented and
the prior art are such that the subject matter as a whole would have been obvious at the time the
invention was made to a person having ordinary skill in the art to which said subject matter pertains.
Patentability shall not be negated by the manner in which the invention was made.

 The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148
USPQ 459 (1966), that are applied for establishing a background for determining
90 obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating
95 obviousness or nonobviousness.

 Claims 1 – 11, 13 – 17, and 19 – 25 are rejected under 35 U.S.C. 103(a) as
being unpatentable over Cornet et al. (U.S. 7,254,112) in view of Hsieh et al. (U.S.

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5,625,780) and what is old and well known in this art as evidenced by Notarianni et al.

100 (U.S. 5,301,346) and Bennett (U.S. 6,539,534).

Regarding claims 1 and 14, Cornet et al. teach a router comprising:

A plurality of input cards (Fig. 1, 150, left side) for inputting data into the
broadcast router;

A plurality of output cards (Fig. 1, 150, right side) for outputting the data from the
105 broadcast router;

At least one device (Fig. 1, 106);

Cornet et al. fail to teach a programmable device, a configuration control card,
and the remaining limitations.

Hsieh et al. teach a programmable device (Fig. 2, 16);

110 A configuration control (Fig. 2, 30) for storing configuration information for
configuring the at least one programmable device to perform a first set of functions (col.
5, line 67 – col. 6, line 12);

Wherein the configuration control is adapted for removal and replacement by at
least one other configuration control that stores other configuration information for
115 configuring the at least one programmable device to perform a second set of functions
having a difference from the first set of functions so as to change a functionality of the
broadcast router (col. 6, lines 18 – 21).

Therefore, it would have been obvious to one of ordinary skill in this art at the
time of invention by Applicant to incorporate the configuration control and
120 programmable device as taught by Hsieh et al. into the system of Cornet et al. for the

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purpose of flexibly interconnecting cards and providing uniform capacitive load, as well as reducing signal delay (Hsieh et al.: col. 2, lines 12 - 34). This would have been obvious in order to improve the performance of the system, as well as making it easily modifiable as the system changes.

125 Cornet et al. and Hsieh et al. fail to teach where the configuration control (ROM 30) is incorporated on a card. The Examiner takes Official Notice that it is old and well known in this art to incorporate a digital device (ROM) on a printed circuit board. This is evidenced by Notarianni et al. (col. 21, lines 18 – 19).

 Therefore, it would have been obvious to one of ordinary skill in this art at the
130 time of invention by Applicant to incorporate the ROM of Hsieh et al. onto a printed circuit card. This would have been obvious since to do so is routine in this art.

 Regarding claims 2, 15 and 20, Cornet et al. teach the additional limitation wherein the broadcast router employs switch points (col. 5, lines 24 – 29), the data
135 received by the plurality of input cards (Fig. 1, LEFT 150) includes input streams (col. 4, lines 21 – 26), And the one or more functionalities comprise at least one of receiving alternate input streams (col. 3, lines 52 – 55).

 Regarding claims 3, 16 and 21 Hsieh et al. teach the additional limitation wherein
140 the configuration information comprises at least configuration data for FPGAs (where an FPGA may be interpreted as an FPID; col. 5, line 67 – col. 6, line 12).

Regarding claims 4 and 17, Hsieh et al. teach the additional limitation wherein the difference involves at least one of adding at least one new function and removing at
145 least one existing function (col. 6, lines 4 – 10).

Regarding claims 5 and 22, Hsieh et al. fail to teach wherein the at least one programmable device is on at least one of the plurality of input cards and the plurality of output cards. However, the Examiner notes that rearrangement of parts is not a
150 patentable distinction, because it would not modify the operation of the system. See *In re Japikse*, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950).

Regarding claim 6, Hsieh et al. teach the additional limitation comprising:

An expansion device (Fig. 2, 22) for receiving the data from the plurality of input
155 cards and arranging the data for transfer within the broadcast router; and

A matrix device for receiving the data from the plurality of input cards for subsequent routing within the broadcast router (Fig. 2, 24).

Cornet et al. and Hsieh et al. fail to teach where the expansion device and matrix device are incorporated on cards. The Examiner takes Official Notice that it is old and
160 well known in this art to incorporate a digital device on a printed circuit board. This is evidenced by Notarianni et al. (col. 21, lines 18 – 19).

Therefore, it would have been obvious to one of ordinary skill in this art at the time of invention by Applicant to incorporate the matrix and expansion devices of Hsieh

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et al. onto printed circuit cards. This would have been obvious since to do so is routine
165 in this art.

Regarding claims 7 and 23, Hsieh et al. teach the additional limitation wherein at
least one of the expansion card and the matrix card provides support protocols to
change input/output assignments of the data (col. 6, lines 4 – 10).

170 Regarding claim 8, Hsieh et al. fail to teach wherein the expansion card and the
matrix card are implemented on a same card. However, the Examiner notes that
rearrangement of parts is not a patentable distinction, because it would not modify the
operation of the system. See *In re Japikse*, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950).

175 Regarding claim 9, Hsieh et al. fail to teach wherein the at least one
programmable device is disposed on at least one of the expansion card and the matrix
card. However, the Examiner notes that rearrangement of parts is not a patentable
distinction, because it would not modify the operation of the system. See *In re Japikse*,
180 181 F.2d 1019, 86 USPQ 70 (CCPA 1950).

Regarding claim 10, Hsieh et al. teach the additional limitation comprising a
control device for providing support protocols to change input/output assignments of the
data (col. 5, line 67 – col. 6, line 4), but fail to teach the device disposed on a control
185 card.

. The Examiner takes Official Notice that it is old and well known in this art to incorporate a digital device on a printed circuit board. This is evidenced by Bennett (Fig. 3, 305).

190 Therefore, it would have been obvious to one of ordinary skill in this art at the time of invention by Applicant to incorporate the matrix and expansion devices of Hsieh et al. onto printed circuit cards. This would have been obvious since to do so is routine in this art.

195 Regarding claims 11 and 24, Hsieh et al. fail to teach wherein the at least one programmable device is disposed on at least the control card. However, the Examiner notes that rearrangement of parts is not a patentable distinction, because it would not modify the operation of the system. See *In re Japikse*, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950).

200 Regarding claim 13, Hsieh et al. teach the additional limitation wherein the configuration control card comprises a user-input device for receiving a user input for initiating a configuration of the at least one programmable device (col. 7, lines 27 – 51; col. 8, lines 3 – 25).

205 Regarding claim 19, Cornet et al. teach a router comprising:

A plurality of input cards (Fig. 1, 150, left side) for inputting data into the broadcast router;

A plurality of output cards (Fig. 1, 150, right side) for outputting the data from the broadcast router;

210 At least one device (Fig. 1, 106);

An expansion device (Fig. 2, 22) for receiving the data from the plurality of input cards and arranging the data for transfer within the broadcast router; and

A matrix device for receiving the data from the plurality of input cards for subsequent routing within the broadcast router (Fig. 2, 24).

215 Cornet et al. and Hsieh et al. fail to teach where the expansion device and matrix device are incorporated on cards. The Examiner takes Official Notice that it is old and well known in this art to incorporate a digital device on a printed circuit board. This is evidenced by Notarianni et al. (col. 21, lines 18 – 19).

220 Therefore, it would have been obvious to one of ordinary skill in this art at the time of invention by Applicant to incorporate the matrix and expansion devices of Hsieh et al. onto printed circuit cards. This would have been obvious since to do so is routine in this art.

Cornet et al. fail to teach a programmable device, a configuration control card, and the remaining limitations.

225 Hsieh et al. teach a programmable device (Fig. 2, 16);

A configuration control (Fig. 2, 30) for storing configuration information for configuring the at least one programmable device to perform a first set of functions (col. 5, line 67 – col. 6, line 12);

Wherein the configuration control is adapted for removal and replacement by at
230 least one other configuration control that stores other configuration information for
configuring the at least one programmable device to perform a second set of functions
having a difference from the first set of functions so as to change a functionality of the
broadcast router (col. 6, lines 18 – 21).

Therefore, it would have been obvious to one of ordinary skill in this art at the
235 time of invention by Applicant to incorporate the configuration control and
programmable device as taught by Hsieh et al. into the system of Cornet et al. for the
purpose of flexibly interconnecting cards and providing uniform capacitive load, as well
as reducing signal delay (Hsieh et al.: col. 2, lines 12 - 34). This would have been
obvious in order to improve the performance of the system, as well as making it easily
240 modifiable as the system changes.

Cornet et al. and Hsieh et al. fail to teach where the configuration control (ROM
30) is incorporated on a card. The Examiner takes Official Notice that it is old and well
known in this art to incorporate a digital device (ROM) on a printed circuit board. This is
evidenced by Notarianni et al. (col. 21, lines 18 – 19).

245 Therefore, it would have been obvious to one of ordinary skill in this art at the
time of invention by Applicant to incorporate the ROM of Hsieh et al. onto a printed
circuit card. This would have been obvious since to do so is routine in this art

An expansion device (Fig. 2, 22) for receiving the data from the plurality of input
cards and arranging the data for transfer within the broadcast router; and

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250 A matrix device for receiving the data from the plurality of input cards for
subsequent routing within the broadcast router (Fig. 2, 24).

 Cornet et al. and Hsieh et al. fail to teach where the expansion device and matrix
device are incorporated on cards. The Examiner takes Official Notice that it is old and
well known in this art to incorporate a digital device on a printed circuit board. This is
255 evidenced by Notarianni et al. (col. 21, lines 18 – 19).

 Therefore, it would have been obvious to one of ordinary skill in this art at the
time of invention by Applicant to incorporate the matrix and expansion devices of Hsieh
et al. onto printed circuit cards. This would have been obvious since to do so is routine
in this art.

260

* * *

 Claims 12, 18 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable
over Cornet et al. (U.S. 7,254,112) in view of Hsieh et al. (U.S. 5,625,780), Watanabe et
265 al. (U.S. 4,764,959), and what is old and well known in this art as evidenced by
Notarianni et al. (U.S. 5,301,346) and Bennett (U.S. 6,539,534).

 Regarding claims 12, 18 and 25, Cornet et al. and Hsieh et al. fail to teach
wherein at least a portion of the configuration information and the other configuration
information is encrypted.

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270 Watanabe et al. teach encrypting configuration information on a ROM (as in Hsieh et al.) for the purpose of preventing the information from being copied by a third party (col. 1, lines 47 - 53; col. 3, lines 12 - 28).

 Therefore, it would have been obvious to one of ordinary skill in this art at the time of invention by Applicant to incorporate the encryption means of Watanabe et al.
275 into the ROM of Cornet et al. and Hsieh et al. for the purpose of preventing the information from being copied by a third party. This would have been obvious for copyright protection purposes.

Conclusion

280 The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

 Any inquiry concerning this communication or earlier communications from the examiner should be directed to MATTHEW D. SPITTLE whose telephone number is (571)272-2467. The examiner can normally be reached on Monday - Friday, 9 - 5:30.

285 If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Rinehart can be reached on 571-272-3632. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/M. D. S./
Examiner, Art Unit 2111

/MARK RINEHART/
Supervisory Patent Examiner, Art Unit 2111